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Amateur Photography.

CONDUCTED BY GEORGE G. ROCKWOOD.

TONING AND FIXING.

the hair and the position of the features should be indicated without immediately attempting to express them. In order that the portrait shall not bring into prominence the imperfections of the face, they should, in the first place, be well understood. If the nose is too short and too far from the mouth, you lengthen it a little without touching the mouth, and the two defects are softened. If, on the contrary, the nose is too long, you shorten it a little, always without touching the mouth, in order not to alter the division and contour of the face. It is highly necessary to avoid this, for we seldom fail to notice whether our acquaintances have long or round faces. But you may enlarge the eye a little, and still preserve its form; contract the mouth somewhat through the expression given to it, or, rather, by that one of its expressions which you adopt.

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THE picture should excel the sketch only in the superiority of the details. Into the sketch the painter throws his spirit, his soul, and his heart. Into the picture he puts all his knowledge, his patient and devoted work, that is to say, his firm resolve to submit to his sketch. The sketch is made *con amore*; the picture, with that calmer and more lasting sentiment which I shall call friendship. The sketch is the work of a day or an hour; the picture is the work of a year or of several months. Do you appreciate all the force of will that is needed to execute in a year what has been conceived in a day? A great artist has said: "Years are needed before succeeding in putting into one's picture all that there is in one's sketch."

* * *

How many artists are like goats, which, when fastened by a cord to a stake, begin at once, even at the risk of strangling, to browse upon whatever is remote and difficult to obtain! It is wiser to begin with that within our reach, with the most simple, the easiest. This germ, simplicity, creates style, and style comes like everything else in nature, unconsciously. One little grain in the mind, and it is all there.

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In a good picture there is a reason for everything, nothing is introduced by chance. The most unobserved object, that which seems most insignificant to the spectator, is sometimes so necessary that, if it were taken away, the picture would in great measure lose its effect, nor even would the composition be well balanced; for often a book, a handkerchief, a basket, thrown down as by chance, balances a person, or even an entire composition.

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I ONCE heard a painter say: "I am about painting a very original picture. I have an entirely new subject." What an error! It is the talent which must be original, not the object represented. An original talent is one which resembles no other talent. It may execute the most commonplace compositions, but it will always be original. It is the manner of first beholding and afterward executing, which is peculiar to you. Can anything be more trite than a cavalier with his horse? Yet, executed by a great artist, this would be a very original subject.

* * *

LET the beginner be taught the first principles of beauty in the human face; that between the two eyes, for instance, there is a space equal to the size of the eye; eyes too widely separated give an unintelligent air; the eyes of cattle are placed thus; in monkeys, on the contrary, they are too near; that the lower part of the ear should be on a level with the lower part of the nose, but placed higher it may still be beautiful; that there should be the same distance between the hair and the eyes, as between the eyes and the lower part of the nose, between the lower part of the nose and the chin; that the mouth should be near the nose.

* * *

AFTER all the subject is of so little importance to posterity, that artists, genuine amateurs, never trouble themselves about it. The action is given well or badly, the sentiment expressed well or badly, the picture is fine or it is ugly. A painter is not an historian; we have books for our instruction. A beautiful picture is like a beautiful woman; we do not ask her name or her address in order to determine whether she is beautiful.

THE first thing to do is to soak the print in a dish of clear water for a few minutes, and thus wash off the free nitrate of silver remaining upon the surface of the paper. A half hour's soaking, with one or two changes of the water, will effect this, and the print will then be ready for toning.

Chloride of gold, the most important ingredient of the toning bath, is sold in bottles containing fifteen grains. Dissolve this in thirty drachms of water, add a drop of hydrochloric acid, and preserve the mixture as a stock solution in a bottle; mark it "gold solution." Make in another bottle a saturated solution of washing soda, also as a stock solution; mark it as such: "soda solution." When the prints have been washed, as before described, and are ready for toning, mix one drachm of the gold solution with one ounce of water. Pour it into a tray, and drop in a small piece of blue litmus paper, which will become red. Render the bath alkaline by adding from the soda solution, drop by drop, until the paper begins to change to blue again. It is better to prepare the toning bath during the day, while the printing is being done, as the bath then seems to work with more smoothness and uniformity. It may be used as soon as mixed.

The print is now taken by two corners and immersed in the gold or toning bath. At first the print will begin to bleach, and turn a warm red color, which soon changes into a beautiful warm black. Put in the prints one by one, keeping them separated or constantly in gentle motion. When a deep purple or warm black is obtained, remove them to a basin of clean water, and rinse them until all are toned, when they will be ready for immersion in the fixing bath, which is to render them permanent. The greatest care should be exercised in not permitting the slightest trace of the fixing bath, or hyposulphite of soda, to reach the toning bath or the prints until they have been immersed in the fixing bath. Such contamination causes yellow, dark stains, which cannot be removed. Therefore one who is toning but a few prints can tone with the left hand, and, passing the prints to the other, the right hand can immerse the prints in the fixing bath. But this is dangerously near, as one solution may be spattered into the other. The shortest distance between the two solutions in my establishment is certainly ten feet.

The fixing bath is made of six ounces of water and one of hyposulphite of soda. This solution removes from the paper all of the chloride of silver that has not been acted upon by the light, but does not injure the picture. The usual time for leaving the print in this bath is about fifteen minutes. If the print is held up to transmitted light before it is placed in the solution, it will appear quite opaque and cloudy in what should be the clear parts of the picture. After it has been in the bath the proper time this will disappear, and the print will have a clear, translucent effect. It should now be washed in two or three changes of water, and left to soak in a dish of water all night. In the morning it can be hung up to dry, and then mounted. If haste is necessary, the print,

after coming from the fixing bath, can be rinsed in water and passed through a common clothes-wringer a few times, after each time being dipped in clean water. It will then be perfectly washed. When quite dry, it may be mounted on card or bristol board, the best paste for this purpose being common laundry starch.

When directions are given to prepare and keep the sensitive paper in a dark room, it will, of course, be understood that daylight only is to be excluded; gas or candle light are permissible. A window closely covered with yellow paper completely filters the light of all actinic or chemical power, and consequently will do no harm. After the final process or fixing, take the greatest care that the prints do not again come into contact with the hyposulphite of soda. Soda is indispensable in its way, but exceedingly harmful out of place. So be careful to keep all the dishes and your fingers free from it. In all of the manipulations observe the most perfect neatness. Handle the prints with the tips of your fingers, and always with deliberation and care. If the silver solution grows weak by use—a mealy look to the prints indicates it—add a few grains of nitrate of silver. If by use it turns a dark wine-color, and the paper is not white when dry, set the solution in clear sunlight for a day or two, and it will clear. Filter it before using it again. The soda (fixing) bath should not be used more than two or three times. Where prints are only occasionally made, a fresh bath should be made each time of printing. The gold (toning) bath works quicker when warmed to about blood heat; prints will then tone in from two to six minutes. Prints on plain paper will tone quicker than those on the albumenized. If your prints are undertoned they will have a warm brown appearance; if toned too much, a cold steel color. A little experience will soon indicate the precise degree of toning required.

If you do your own printing and toning you must be prepared to have stains on your hands and clothing from the nitrate of silver. They may generally be removed by moistening the spots with tincture of iodine, and then with a saturated solution of hyposulphite of soda. Cyanide of potassium will remove them more quickly; but it is deadly poison, and is not recommended.

I AM asked what is the meaning of the mathematical symbol $\frac{f}{20}$, often used in relation to lenses. It means that the aperture in the stop is one twentieth of the focus of the lens.

THE PERFECT SHUTTER.—Probably there is nothing in the department of photographic mechanics that has developed so much ingenuity as the effort to secure an automatic contrivance which would give satisfactory results for the exposure of plates. I have tried a great many shutters, and always when I had serious work on hand have gone back to some form of the old-fashioned guillotine or drop shutter. The objective point, of course, was not only speed, but the admission of the most light in the brief time the plate was exposed to the view. In the large majority the centre opened and closed again by the passing of two slides in front of the lens, each shutter having an opening and so arranged that the openings would pass the lens at the same instant. Beginning with an aperture the size of a pin's point, it increases to the full size of the stop, and then closes again. With an entire exposure of the one hundredth

of a second, under such circumstances, it would be difficult to compute the fraction of time during which the plate had the benefit of *all* the light; certainly not one thousandth part of a second! Mr. Eastman, of Rochester, I think, has solved the problem in a very simple manner by passing a shutter over and in near contact with the plate. It forms no part and is detached from the lens, and is a simple mechanism of the box of his detective camera. So having adjusted the size of stop and speed at which his shutter is to act, he opens the lens, and at the proper moment passes the shutter, which has an adjustable opening, *before the plate*. This, of course, gives the full opening of the stop during the entire exposure, whatever that may be, and enables one to *time* the exposure with accuracy. For instance, suppose the shutter is five inches wide, and has an aperture half an inch wide, and is one second in passing from side to side. Any intelligent amateur can figure that out.

